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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/581,253	06/26/2000	HIROO IKEGAMI	P107153-0000	5157

23353 7590 01/16/2002

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EXAMINER	
MADSEN, ROBERT A	
ART UNIT	PAPER NUMBER
1761	7

DATE MAILED: 01/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

T:D-7

Office Action Summary	Application No. 09/581,253	Applicant(s) IKEGAMI ET AL.
	Examiner Robert Madsen	Art Unit 1761

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on ______ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1,2,5-10 and 13-15 is/are pending in the application.

4a) Of the above claim(s) ______ is/are withdrawn from consideration.

5)☐ Claim(s) ______ is/are allowed.

6)☒ Claim(s) 1,2,5-10 and 13-15 is/are rejected.

7)☐ Claim(s) ______ is/are objected to.

8)☐ Claim(s) ______ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on ______ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on ______ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. ______ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 .
4) ☐ Interview Summary (PTO-413) Paper No(s). ______ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "low pressure" in claim 10 is a relative term which renders the claim indefinite. The term "low" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. For examination purposes this term will not be given any weight for claims 10,12-15.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1,2,5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita (JP55023951) in view of Yamamoto et al. (JP 01252274), Lyu (US 3905507) MacPherson (US 4402419) , and Yamaguchi (US 443112).

Morita teaches a thin walled aluminum can that is resistant to deformation and is pressurized with nitrogen gas to an internal pressure of 0.3-0.7kgf/sqcm (Abstract), but is silent in teaching any particular dimension of the can or an inspection aptitude

Yamamoto et al. are relied on as further evidence of the conventionality of an aluminum can that is pressurized with gas, comprising an internal pressure of 0.6-1.8 kgf/sqcm, and is resistant to deformation (Abstract).

Lyu is relied on as evidence of a conventional aluminum can resistant to deformation that is pressurized with gas. Lyu teaches an inspection aptitude since Lyu teaches a flat bottom can that is designed to maintain a desired rigidity (i.e. remain in flat position) at a particular pressure. Lyu teaches the general dimension selected such as an annular ground portion diameter, the height of a flat bottom, the height of an inwardly directed annular bead, and the angle of inclination of an internal rising wall all effect the rigidity of the cans. The bottom of the cans comprise an annular ground portion that is 85-95% of the outer diameter of the can. Since Lyu teaches the height of the flat bottom is 8-15 times the thickness of the material used and the height of an annular bead is 15-25 times the thickness of the material used (i.e. Lyu teaches the height of the bead from the flat bottom is 0-10 times the thickness of the material used). Lyu also teaches the difference in the height between the flat bottom and annular bead is an important factor to make the container more pressure resistant and result in a net zero force on the bottom wall. (Abstract, Column 2, lines 45-68, Column 3, lines 10-64, Column 4, lines 40-54, Figures 1 and 2).

MacPherson is only relied on as evidence of the conventional thickness of aluminum used for pressurized cans: 0.010-0.014 in (i.e. 0.25-0.35mm) (Abstract, Column 3, lines 10-20).

Yamaguchi is relied on as further evidence of the conventionality of a pressurized can having a flat bottom positioned lower than an annular bead like Lyu that is used in combination with the same thickness of material as taught by MacPherson (Abstract, Examples).

Therefore, it would have been obvious to select an aluminum can having a annular ground portion from 70-85% the diameter of the outer diameter, a height of the bottom 2 mm-3.75 mm and a bead height from the bottom 0-3.5 mm, since one would have been substituting one conventional aluminum can for resisting deformation under pressure for another. To further include a annular ground portion from 70-85% the diameter of the outer diameter, a bottom height of 0.5-2 or 3.75-6mm, or annular bead height from 3.5-4.0 mm would have been an obvious result effective variables of the desired rigidity/ pressure resistance of the can since Lyu teaches these variables, in combination, affect the overall pressure resistance of the can.

Regarding claim 2, Morita is silent in teaching the internal pressure is maintained with an accuracy of +/-0.2 kgf/sqcm. However, Yamaguchi, who teaches conventionality of a pressurized can having a flat bottom positioned lower than an annular bead like Lyu that is used in combination with the same thickness of material as taught by MacPherson (Abstract, Examples), also teaches these types of cans are given a safety range of 0.2-0.5 kgf/sqcm (Example 5). Therefore, it would have been

obvious to maintain an accuracy of +/- 0.2kgf/sqcm, since this is the conventional safety range for aluminum cans with the recited bottom structure.

Regarding claim 5, Morita teaches retorting sterilization after filling and sealing fruit drink and sake (Abstract), but is silent in teaching a low acid drink per se. Yamamoto is relied on as evidence of the conventionality of using similar pressurized cans that undergo retorting after filling and sealing for low acid drinks. Therefore, it would have been obvious to include low acid drinks in the can of Morita since one would have been substituting one conventional drink for another in similar cans.

Regarding claim 6, Morita teaches a gas exchange method, or pressurizing with nitrogen gas (Abstract).

Regarding claims 7-9, Morita teaches the pressurized can resists deformation, but, as discussed above in the rejection of claim 1, is silent in teaching the particular inspection aptitude.

However, Lyu teaches the deformation resistant aluminum cans have bottoms that are designed to remain flat and rigid under a particular pressure range and would change position for a change in pressure outside that range (Column 3, line 10-Column 4, line 20). Thus, Lyu teaches an internal pressure inspection aptitude. Therefore, it would have been obvious that any inspection aptitude which evaluates the movement of a flat surface such as measurements using a tap test as recited in claim 7, displacement of the amount of an outer peripheral portion of the can as recited in claim 8, or the reaction of the outer peripheral portion of the can with respect to a change in pressure as recited in claim 9 could be used.

Claims 10, 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyu (US 3905507) in view of MacPherson (US 4402419) and Yamaguchi (US 443112).

Regarding claim 10, Lyu teaches a seamless pressurized can (i.e. a side wall and integral bottom) for carbonated beverages provides a method form determining the dimensions for such cans, preferably from thin material. Lyu teaches an inspection aptitude since Lyu teaches a flat bottom can that is designed to maintain a desired rigidity (i.e. remain in flat position) at a particular pressure. Lyu teaches the general dimension selected such as an annular ground portion diameter, the height of a flat bottom, the height of an inwardly directed annular bead, and the angle of inclination of an internal rising wall all effect the rigidity of the cans. The bottom of the cans comprise an annular ground portion that is 85-95% of the outer diameter of the can. Lyu teaches the height of the flat bottom is 8-15 times the thickness of the material used and the height of an annular bead is 15-25 times the thickness of the material used (i.e. Lyu teaches the height of the bead from the flat bottom is 0-10 times the thickness of the material used). Lyu also teaches the difference in the height between the flat bottom and annular bead is an important factor to make the container more pressure resistant and result in a net zero force on the bottom wall. (Abstract, Column 2, lines 45-68, Column 3, lines 10-64, Column 4, lines 40-54, Figures 1 and 2). Although Lyu teaches the can design allows for manufactures to reduce the thickness of material used, Lyu is

silent in teaching the particular thickness of material, and thus the height of the bottom and the height of the annular bead relative to the bottom.

MacPherson is only relied on as evidence of the conventional thickness of material used for pressurized cans: steel 0.006-0.009 in (i.e. 0.15 mm-0.22 mm) and aluminum 0.010-0.014 in (i.e. 0.25-0.35mm) (Abstract, Column 3, lines 10-20).

Yamaguchi is relied on as further evidence of the conventionality of a pressurized can having a flat bottom positioned lower than an annular bead like Lyu that is used in combination with the same thickness of material as taught by MacPherson (Abstract, Examples).

Therefore, it would have been obvious to form the height of the bottom 1.2 mm-5.25 mm and the bead height from the bottom 0-3.5 mm, since one would have been substituting on conventional thickness of material for another for the same purpose. To further include a annular ground portion from 70-85% the diameter of the outer diameter, a bottom height of 0.5-1.2 or 5.25-6mm, or annular bead height from 3.5-4.0 mm would have been obvious result effective variables of the desired rigidity/ pressure resistance of the can since Lyu teaches these variables, in combination, affect the overall pressure resistance of the can.

Regarding claim 12, as discussed above in the rejection of claim 10, Lyu teaches the annular ground portion diameter is 85-95% of the outside can diameter, the inwardly directed annular bead diameter is 75% to 95% of the annular ground portion diameter, and the flat bottom diameter is 65% to 85% of the annular bead diameter. These relationships are important to prevent deformation of the bottom of the container

(Column 4, lines 21-55). Thus Lyu teaches the flat bottom diameter is 60-81% of the ground portion diameter. To further adjust the flat bottom diameter to 82-90% of the ground portion diameter would have been an obvious result effective variable of the desired rigidity/ pressure resistance of the container since Lyu teaches the relationship of these diameters affect the pressure resistance of the can.

Regarding claim 13, Lyu teaches the angle of inclination of the internal wall connecting the annular portion to the annular bead is initially 75-90° then 55-70°, since Lyu defines this angle relative to the vertical axis as 0-15° and 20-35°. Lyu teaches this angle affects the rigidity of the bottom wall and is especially important for thinner materials (Column 4, lines 14-20). Therefore, to select any angle from 90° to 110° would have been an obvious result effective variable of the particular thickness of material used and the required bottom wall rigidity.

Regarding claim 14, Lyu teaches the annular bead has a gradually inclined portion continuous to the bottom wall from the top of the bottom wall (Figures 1 & 2).

Regarding claim 15, as discussed above in the rejection of claim 10, MacPherson teaches the conventional thickness of steel and aluminum materials used for pressurized cans is 0.15-0.22 mm and 0.25-0.35mm, respectively. Therefore, it would have been obvious to select these particular materials at these particular thickness values since one would have been substituting one known material for another for pressurized can.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Blanchard (US 3409167),Wallace (US 4048934), Lee Jr. et al. (US 4177746), Cvacho et al. (US 4151927), Saunders (US 4120419), Enoki et al.(JP2000016418A), Claydon et al. (GB 2269152 A), Claydon et al. (WOP9403367), and Echternach (GB 2119743), all teach metal cans with ground portion diameter smaller than the outside diameter, a raised flat bottom, and an annular bead above the flat bottom to make the cans pressure resistant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Madsen whose telephone number is (703)305-0068. The examiner can normally be reached on 6:30AM-4:00PM M-F (except alternate Fridays).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (703)308-3959. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-7718 for regular communications and (703)305-7718 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0061.

Robert Madsen
Examiner
Art Unit 1761
January 14, 2002

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1/14/02